



Maryland Department of Environment
Water and Science Administration
Compliance Program
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Inspector: Ronald Wicks
AI ID: 3076

Site Name: Patapsco WWTP
Facility Address: 3501 Asiatic Ave, Curtis Bay, MD 21226
County: Baltimore City County

Start Date/Time: May 06, 2021 9:35AM
End Date /Time: June 04, 2021 11:35AM

Media Type(s): NPDES Municipal Major Surface Water

Contact(s):
Mr. Neal Jackson, Plant Manager
Mr. Eric Johnson, Wastewater Operations Supervisor
Mr. Robert Lombardi, Wastewater Operations Engineer
Mr. Marvin Young, Wastewater Operations Supervisor

NPDES Municipal Major Surface Water

Permit / Approval Numbers: 15DP0580
NPDES Numbers: MD0021601
Inspection Reason: Routine Scheduled
Site Status: Active
Compliance Status: Noncompliance
Site Condition: Noncompliance
Recommended Action: Additional Investigation Required
Evidence Collected: Photos or Videos Taken, Record Review, Samples Taken, Visual Observation
Delivery Method: Email
Weather: Clear

Inspection Findings:

The Patapsco WWTP is a 73 MGD capacity activated sludge with a pure oxygen fed reactor biological treatment with ferric chloride for removal of phosphorus. The treatment system has been recently upgraded to ENR standards. There is chlorination, dechlorination and post aeration prior to final discharge to the surface water of the State.

The average flow is approximately 55-57 MGD; however, during heavy rainfall flows can reach 213 MGD from infiltration from sewer lines. The receiving water is the Patapsco River, protected for Use II, water contact recreation and the protection of aquatic life.

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Today a Performance Audit Inspection (PAI) was conducted for compliance with the individual NPDES Discharge Permit MD0021601 and State number 15-DP-0580 for the Patapsco WWTP. The permit effective date is 10/1/2017, expiration date 09/30/2022 and a reapplication date of 03/31/2021. The renewal application has been received. The facility's activity code or standard industrial classification (SIC) is 4952 and the North American Industry Classification System (NAICS) is 22132. On this date, I met Mr. Neal Jackson, Plant Manager, Mr. Eric Johnson, Wastewater Operations Supervisor II, Mr. Robert Lombardi, Wastewater Division Operations Engineer and Mr. Marvin Young, Wastewater Operations Supervisor II representing the facility on-site for this audit.

The focus of the inspection was the Self-Monitoring Program and operations and maintenance.; however, the following data was also examined

These records included the following for the period January 2020 – April 2021:

1. Discharge Monitoring Reports (DMR) - obtained through NetDMR
2. Monthly Operating Reports (MOR) - obtained through NetDMR
3. Laboratory analytical reports- (select routine analytical reports)
4. Operator logs
5. Field instrument calibration records (reviewed on site)
6. Annual cumulative monitoring data for 2020 - obtained through NetDMR
7. Whole effluent toxicity reports and statistical data for 2020 and 2021 -
8. Operations and Maintenance records
9. Toxic chemical testing (TCT) reports for 2021
10. FOG mitigation records
11. Capacity Management Plan

During a preliminary meeting with the above persons, I discussed my plans for this PAI and through this initial discussion determine where to focus my time while on site. The first topic of discussion were concerns expressed by a representative of Blue Water Baltimore. These concerns were:

- The result of a sample collected for Enterococci on May 4, 2021, over the discharge pipe for the Patapsco WWTP was 1,616 MPN/100mL.

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- The result of another sample for Enterococci collected at the same location on April 20, 2012 was 789 MPN/100mL.
- There were small but widespread FOGs in the water around the discharge pipe.

According to Mr. Johnson and Mr. Jackson, there was a power outage the morning of May 4, 2021, and the backup generators failed to engage due to failure of the batteries. The facility was without power for over an hour, which caused an upset of the system. They now have a procedure for checking the batteries monthly. Mr. Jackson further indicated that for the month of April 2021, they lost the compressor on the ENR denitrification system and the filter could not be backwashed causing enterococci values to be elevated. They did not provide a reason for the FOG in the Patapsco River.

After the preliminary meeting, I began the inspection with a review of the self-monitoring program.

Self-monitoring Program

I observed numerous deficiencies in the Self-monitoring program associated with:

- Sample collection/holding time,
- Sample preservation/filtration
- Laboratory analysis
- Collection of quality assurance samples
- For 2020 - 2021 there have been a significant number of samples that have been mishandled resulting in no data because of unsatisfactory collection or handling practices. Below in Table 1 is a list of problems observed for the third and fourth quarters of 2020 and 2021 through the date of this inspection.
- Sample preservation required under 40 CFR Part 136 has not been followed for all samples
- Rinsate and equipment blanks are not being collected properly
- Total PCB results for the TMDL allocation have been inaccurately reported.
- The extremely toxic 12 dioxin-like PCB congeners identified by the World Health Organization (WHO) were not specifically reported as specified by the MDE's Guidance document titled *REPORTING REQUIREMENTS FOR TOTAL PCBs (PCB CONGENERS) BY EPA METHOD 1668 C or A*.
- The tPCB 1668A laboratory report states that the method blanks met the acceptance criteria, but the laboratory failed to report the criteria or supply a copy of the method blank results. This data is needed to determine if the results meet the Department's criteria outlined in *REPORTING REQUIREMENTS FOR TOTAL PCBs (PCB CONGENERS) BY EPA METHOD 1668 C or A*.
- Deficiencies concerning the analysis of total residual chlorine.

Table 1

Date	Parameter	Issue	Action
September 24, 2020	All Composite Samples	Staff failed to submit samples to the contract laboratory	Corrective action procedure now in place
September 22, 2020	Cn	Shipping error by contract laboratory caused samples to arrive at third party laboratory beyond the holding time. Temperature criteria requirements were also exceeded	None given
November 22, 2020	BOD and TSS	Missing information on chain of custody sheet caused a delay in getting the samples processed by the contract lab. The Patapsco WWTP was not notified of the problem until 12/4/2020, which was beyond the maximum holding time.	The permittee notified the contract to immediately inform of any issues relating to sample acceptance.
December 11, 2020	TSS	Sample was analyzed beyond the maximum holding time.	Laboratory oversight
December 12, 2020	TSS	Sample was analyzed beyond the maximum holding time.	Laboratory oversight
12/21/2020	Ortho phosphorous	The laboratory could not provide results for a sample collected on 12/21/2020. The sample could not be found	Another sample was collected on 12/24/2020
January 25, 2021	Ortho phosphorous	Sample was not filtered by staff within 15 minutes of collection as required under 40 CFR Part 136.	Emails are now sent out when the Op samples are filtered.
March 12, 2021	BOD and TSS	Sample were discarded by the laboratory	None provided.

During a review of the results of the **2021 Toxic Chemical testing** that was done concurrently with the Biomonitoring testing I observed the following:

1. Sample preservation required under 40 CFR Part 136 has not been followed see # 4 and #8 below.
2. Rinsate and equipment blanks are not being collected properly
3. The sample compositing period is not recorded in the chain of custody sheet (CoC) for all composite samples
4. The pH of the compound Acrolein was adjusted to a pH of <2.0 SU. The pH of acrolein should be adjusted to a pH of 4-5 SU. The reported acrolein result may not be accurate due

to improper preservation. Note: Samples for acrolein receiving no pH adjustment must be analyzed within 3 days of sampling.

5. The CoC shows that the samples for the equipment blanks and effluent samples were collected on the same day at the same time, 1/12/2021 and the time was entered as 12:00 – 11:59 while according to the CoC the date and time recorded on the sample container label was 1/12/2021 at 23:59.
6. The time of sample collection shown on the CoC for the organochlorine pesticides subcontracted to Eurofins was reported as 1/12/2021 at 23:50 for the equipment blank and 1/12/2021 at 23:59
7. The laboratory's reporting limit for Chromium IV is 10 ug/L. The RL specified in the MDE Toxic Chemical Testing Protocol is 0.1 µg/L.
8. The temperature of the samples collected for the 2021 TCT was 8°C at the time of receipt at the primary contact laboratory (ALS). This temperature is above the maximum temperature of 6°C.
9. Equipment/rinsate, trip, and field blank samples are used to evaluate contamination during sampling. The equipment blanks had detectable concentrations of certain metals and in some cases above that detected in the effluent samples. See Table 2 below. The equipment blanks are analyte-free reagent water that is run through the sampling equipment after the equipment has been cleaned and before collecting the samples. However, the CoC records show that the equipment blanks are collected at the same time as the samples, which is not possible, if the equipment/rinsate blanks are collected properly.

Table 2 Metals with Detectable Amounts of the Target Analyte in the Equipment Blank

Parameter	Sample µg/L	Equipment blank µg/L
Aluminum	8.0	68.8
Antimony	0.174	0.094
Arsenic	0.3 J*	0.13 J
Barium	24.5	3.93
Chromium	0.44	0.74
Cobalt	0.586	0.014 J
Copper	2.06	3.76
Iron	674.0	11.1
Lead	0.98	0.105
Nickel	3.68	0.04 J

*J estimated value

Total PCB Monitoring for TMDL Program

1. The PCB TMDL laboratory data show that for the 4th quarter of 2020, the equipment/rinsate blank result of 675 pg/L was reported on the DMR instead of the sample result of 2550 pg/L. The Permittee should submit an amended report for December 2020.
2. The PCB TMDL laboratory data show that for the 1st quarter of 2021, the equipment blank result of 565 pg/L was reported on the DMR instead of the sample result of 2600 pg/L. The Permittee should submit an amended report for March 2021.
3. A sample for tPCBs by EPA 1668A, collected on 1/12/2021 with a result of 1489 pg/L was not reported in the 1st quarter of 2021. There was also a sample collected on 1/15/2021 with a result of 2600 pg/L as well and mentioned above. The average concentration of 2044.5 pg/L should be reported and used for the calculation of the loading for the first quarter of 2021.
4. The total PCB loading for the 1st through 4th quarters of 2020 is 123.2 grams, which is above the annual allocation of 27.2 grams. Bureau Head Mr. Josef Kebede, requested in November of 2020 that the Department postpone any action at this time for exceeding the 2020 annual allocation of tPCBs until after the 2nd quarter of 2021. Mr. Kebede indicated that Baltimore City has partnered with the USGS and UMBC to implement a monitoring strategy for the tPCBs under the TMDL program. Mr. Kebede further indicated that preliminary findings show that there are legacy PCB deposits within the sewer lines and the current cleaning and lining project may be affecting tPCB test results at the Patapsco WWTP. The maintenance of the lines was scheduled to be completed by the end of 2020. The final decision will be made after reviewing the 2nd quarter 2021 tPCB data.

Operation and Maintenance

The results of the samples show that there have been problems meeting effluent limitations due to the performance of the treatment plant. Below in Table 3 is a list of effluent violations for the period July 2020 through the month of April 2021. In addition, the permittee failed to meet the total annual cumulative load for total nitrogen and total phosphorous for the year 2020 (see Table 4 below for details). According to Mr. Jackson, the violations have been caused by equipment failures. The drives on several clarifiers stopped functioning and the denitrification filter system have either been bypassed or not functioning effectively because of a problem with the air compressor. During an Evaluation of the permittee's operation and maintenance activities that impact plant performance, I found insufficient maintenance and operational staff. According to Mr. Jackson, there is a worker shortage due to the pandemic and the number of people allowed at the plant has been restricted.

Table 3 Violations third quarter of 2020 – April 2021

Date	Parameter	Result	Permit Violation	Permit Limitation
July, 2020	Enterococcus	July Geomean 56.4 MPN/100 mL	Exceeded Monthly Geomean	35 MPN/100 mL
July 2, 2020	Total Phosphorous	67,323 lbs./year	Exceeded the 2020 total cumulative annual loading for 2020 on 7/2/2020 and will continue to exceed the limit until 12/31/2020	66,700 lbs./year
August 2020	Enterococcus	August Geomean 73.8 MPN/100 mL	Exceeded Monthly Geomean	35 MPN/100 mL
August, 2020	TSS	75 mg/L	Exceeded the weekly average for week of 8/22 - 8/28/2020	45 mg/L weekly average
August 12, 2020	Total Phosphorous	49,200 lbs.	Exceeded the Season 5/1-10/31 Limit. Will continue to exceed the seasonal limit until 10/31/2020	33,330 lbs.
August 24, 2020	Total Nitrogen	386,500 lbs.	Exceeded the Season 5/1-10/31 Limit. Will continue to exceed the seasonal limit until 10/31/2020	333,330 lbs.
September 22, 2020	Total Nitrogen	890,414 lbs.	Has exceeded the total annual cumulative loading for 2020. Will continue to exceed the limit until 12/31/2020	889,300 lbs. annual
March 2021	Enterococcus	March Geomean 52.6 MPN/100 mL	Exceeded Monthly Geomean	35 MPN/100 mL
April 2021	Enterococcus	April Geomean 48.4 MPN/100 mL	Exceeded Monthly Geomean	35 MPN/100 mL
April 2021	TSS	Monthly Average Concentration 32 mg/L	Exceeded Monthly Average Concentration	30 mg/L
April 2021	BOD	Weekly Average Concentration 49 mg/L	Exceeded Weekly Average Concentration	45 mg/L
April 2021	BOD	Monthly Average Concentration 40 mg/L	Exceeded Monthly Average Concentration	30 mg/L
April 2021	BOD	Monthly Average Loading 18,923 lbs.	Exceeded Monthly Average Loading	18,000 lbs.

Total Annual Cumulative Load for 2020

The annual nitrogen load for 2020 was 1,029,200 lbs. and the annual phosphorous load for 2020 was 114,500 lbs. The facility did not meet the annual loading limitations for these parameters for 2020. In addition, the annual total suspended solids load for 2020 was 1,690,800 lbs. which is below the permit limitation. The total flow for 2020 was 18,098.2 MG. See Chart A below:

Table 4

Parameter	Cumulative Total for 2020	Limit	Compliance
Total Suspended Solids	1,690,800 lbs./yr.	6,669,776 lbs./yr.	Y
Total Nitrogen	1,029,200 lbs./yr.	889,300 lbs./yr.	N
Total Phosphorous	114,500 lbs./yr.	66,700 lbs./yr.	N
Flow	18,098.2 MG/yr.	NA	NA

FOG Mitigation Plan

To assess compliance with the permittee’s FOG Mitigation Plan Revision 11/2017, I discussed the plan with Mr. Jackson, Mr. Johnson, Mr. Young and Mr. Lombardi. The plan states the following:

Capital improvement project for 2018 is to provide pump and scum removal system upgrades for all Primary settling tanks (PST). The plan calls for replacing the flight plant brackets on PSTs #2-6 with new functional heavy-duty brackets, installing scum trough (skimmer) with actuated adjustment rods in PST #1-3.

The plan states that all 18 PSTs will be functional. However, during this inspection I found that only 5 of the 18 were in operation and functional. The details of the operations will be discussed during the site review.

The FOG Plan has provisions for the following:

- Replace the actuators – This has not been done.
- Replace the flights with a quality product. – This has not been done.
- Replace or refurbish Scum Troughs – This has not been done.

The current FOG plan is not accurate or consistent with what is being done at this time. None of the maintenance work and equipment replacement contracts listed above and included in the FOG plan have been put out for bid. Most of the identified problems in the plan have not been corrected.

A more comprehensive site-specific BMP plan is required to address the problems associated with the management and treatment of FOG, which are due to conditions particular to this facility. As previously mentioned, along with inadequate operations and maintenance, there is a major facility

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design problem that requires an engineering solution. I am recommending a site-specific BMP to address the problem caused by poorly functioning and inoperable equipment. This BMP should include procedures, preventive maintenance, spare parts inventory, and other appropriate measures for solving specific problems with FOG.

The permittee has failed to submit the permit-specified annual report to the Department for the years 2018, 2019 and 2020 describing measures taken to comply with the FOG Mitigation Plan.

Because of the finding of this inspection the permittee has failed to comply with the Department's Consent Order (CO-16-2405), which specifies routine maintenance and repair of the skimmers/scum troughs, as required

Wastewater Capacity Management Plan

The facility has submitted the 2017 Wastewater Capacity Management Plan (WCMP) on 2/9/2018 because at the time of the permit renewal the most recent three-year average flow for this facility was over 80% of its design capacity. The permittee should now submit a three-year updated WCMP for the period ending 12/2020.

Whole Effluent Toxicity Testing and Concurrent Toxic Chemical Testing

The whole effluent toxicity (WET) study plan was submitted to the Department as specified by the permit. The WET study plan was approved, and annual WET testing began in 2018. Below is a summary of the data for the period 2018 – 2021:

The test results show that dose responses for the *Cyprinodon variegatus* were not statistically different from the control for all four annual testing events. The IC25 was >100% for all 4 tests. However, the dose responses for the *Americamysis bahia* were statistically different from the control. The IC25 endpoints for each test are listed below in Table 4. There was an inhibition to growth and egg production for *A. bahia*. However, since the IC25 for all tests were above the IWC of 26.32%, the effluent is not considered toxic due to the receiving water dilution factor.

Table 4. *Americamysis bahia* WET results.

Year	IC25 Growth	IC25 Fecundity
2018	42.7	Not calculated
2019	70.0	>100
2020	35.2	87.98
2021	>100	>100

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Operator Certification Documentation

Next, I reviewed the certification status of the operators to ensure that all operators have the proper certification to operate the treatment works to comply with the requirements in COMAR 26.06.01.04. During my review of the records, I found that all licenses except for two were up to date. On 6/3/2021 the Mr. Johnson sent me a copy of an email from the Board verifying an active license for one of the operators whose license had expired. Mr. Johnson indicated that the paperwork for the other expired license should be available by 6/4/2021.

Site Review

Next, I conducted a site review accompanied by Mr. Jackson, Mr. Johnson, and Mr. Young. The first stop was at the head of the plant. The facility has two influent lines, domestic, which is 90% of the flow and industrial, which makes up the remaining 10% of the flow. The domestic waste enters the plant at the grit building. The facility generates 60 – 70 tons of grit per month, which is landfilled off site. The industrial flow and domestic flow combine at the fine screen building.

I checked the influent tank at the fine screen building. In the past I have found a heavy layer of fats, oils, and grease (FOG) on the surface of the water in the influent tank. However, during this inspection, I found the surface of the influent to be free of floating FOG. According to Mr. Jackson, the main pumping station now has a mixer that emulsifies the FOG making it more difficult to collect at the headworks.

The facility has eight screening units, and three units are online at a time for the fine screening of the wastewater. I found that a few of the screening units were filled with trash and other debris that would prevent proper operations of the screening units. The active units should be routinely scraped down and the units that are not being used should be manually scraped, as necessary, immediately after being taken out of service. These units should be ready to be put back on-line at any time.



Bar Screens for Fine Screening 5/6/2021

The wastewater is then sent to primary settling tanks (PST) for initial settling of the solids. The plant has eighteen primary settling tanks. The system was designed so that the bottom sludge from the PSTs is gathered by screw collectors. This wasted sludge and FOG collected in the scum troughs or skimming troughs would then be sent to the gravity thickeners. However, due to improper maintenance and equipment failures the system is not functioning as originally designed. These problems were addressed in the permittee's 2017 FOG Mitigation Plan but not resolved. I observed that there was a significant amount of FOG in each of the skimming troughs on the functioning PSTs. The actuators are not functioning, which prevents the troughs from turning to release the collected FOG. I observed this problem during a previous inspection, and at that time I observed that the troughs were being manually turned and the collected FOG flowed to a grease collection pit. During this inspection this was not being done and the FOG and scum was not being removed from the troughs. The excessive collection of FOG and scum at the PSTs indicate a major treatment design problem that requires an engineering solution. However, because to the excessive amount of grease in the scum troughs and the number of out of service PSTs, there is reason to assert that the PSTs have not been maintained effectively to ensure proper function and operation.

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Because of the excessive amount of sludge/FOG mixture in the scum troughs, some of the scum troughs may not be able to be turned thus causing a backup of sludge/FOG mixture. This backup will eventually cause the PST to fail. Currently of the 18 PSTs only 5 are functional at this time and if the problems are not quickly resolved, these systems will also fail in time. According to Mr. Jackson and Mr. Johnson, the scum pumps are not functioning on some units. I explained to them that the facility's spare parts inventory should include various type of pumps and parts required for routine repairs. I was told that since the ransomware breach there has been problems with accessing the spare parts inventory.



PST Scum trough with excessive amount of FOG 5/6/2021

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PST Scum trough with excessive amount of FOG 5/6/2021

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PST not operational due to solids and FOG 5/6/2021

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PST 5/6/2021

The next stop was at the #1 secondary clarifier, which was functioning satisfactorily.

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Secondary Clarifier #1 5/6/2021

Next, I inspected the chlorine contact basins prior to the final discharge. There are 4 contact chambers and 3 of the 4 are currently online. Each contact chamber has 3 scum logs or troughs to remove floating scum. Moreover, because of fluctuations in flow, the level of the scum logs must be adjusted according to the water level in the contact chambers. When we arrived at the chlorine contact chambers, I observed that the skimming ports for the scum logs for the in-service chlorine contact chamber were above the water level. This is a violation of Special Condition M, d. of the permit, which requires that “During normal flow condition, the permittee shall either raise the water level or lower the scum logs in the contact chamber to optimize the FOG removal efficiency”

I requested that the scum logs be lowered to skim off the floating particles. According to Mr. Johnson, the scum logs can only be used in one chlorine contact chamber at a time because when two or more contact chambers use the scum logs the scum collection pit fills too quickly causing additional problems. During the initial interview, I was informed that the scum logs are checked at least hourly and raised or lowered, as necessary. Based on my observations today and the findings by Blue Water, the scum logs should be checked more frequently.

Since all effluent from the contact chambers cannot be skimmed before discharging due to problems associated with the collection of the FOG, the permittee should find a way to correct this problem and in the interim floating oil booms should be placed in the chambers prior to the weirs for all chambers where the scum logs are not being used. The current FOG mitigation plan should

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be updated to address this problem

The permittee should consider installing an engineered collection system designed to collect and transfer the collected scum and FOG from all scum logs in the chlorine contact basins to the collection pits.



Scum log above water surface 5/6/2021

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Floating scum being discharged before scum log was lowered 5/6/2021



Scum log lowered at my request 5/6/2021

I observed small particles floating in the backwash water from the denitrifying filters. According to Mr. Jackson, the particles were media from the filters. Mr. Jackson further stated that Baltimore City is working with the filter manufacturer and the installation contractors to resolve the problem.

Self-Monitoring Program

There facility maintains a small laboratory at the final outfall, where pH, DO and Total residual chlorine (TRC) is measured. During a review of the self-Monitoring Program, I observed the following:

1. Test equipment, reagents, and calibration documentation were reviewed for the onsite testing (DO, and pH) and were found to be acceptable for NPDES testing requirements.
2. Total residual chlorine (TRC) measurement - The calibration of the colorimeter used to monitor TRC is not being checked prior to each use using a series of chlorine standards or chlorine equivalency standards e.g., chlorine gel standards, potassium permanganate to comply with the approved method and 40 CFR Part 136 requirements. In addition, the colorimeter must also be checked quarterly at a minimum of three points using a series of primary chlorine standards in the range of 0.05 to 4.0 mg/l. I was told that this is being done but these records were not available because the person who maintains the calibration records associated with these records was not on-site.
3. The facility is collecting a 24-hr, flow-proportioned composite samples at Outfall 001 in accordance with the requirements of the permit. The permittee maintains a refrigerated automatic composite sampler at the outfall. The sampler was inspected, and I found that the sampling container and tubing were in satisfactory condition and the temperature of the refrigerated compartment was 4°C which meets 40 CFR Part 136 temperature preservation requirements.

With respect to the above MDE authorization, the following violations were observed for the Patapsco WWTP under Environment Article Title 9:

1. For 2020 - 2021 there have been a significant number of samples that have been mishandled resulting in no reportable data because of unsatisfactory collection or handling practices.
2. Rinsate and equipment blanks for the toxic chemical testing and tPCBs are not being collected properly,
3. Total PCB results for the TMDL allocation have been inaccurately reported. The permittee reported the results of the equipment/rinsate blanks instead of the samples for the 4th quarter of 2020 and the 1st quarter of 2021. In addition, the permittee failed to report the results of a second PCB sample collected on collected on 1/12/2021.
4. The extremely toxic 12 dioxin-like PCB congeners have not been reported as specified.
5. The 2021 Toxic Chemical testing failed to meet the sampling and analytical requirements specified by Special Condition F of the permit. See specific problems listed above and in Table 2 above.

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6. There have been a series of effluent violations for the period of my review, which were caused primarily by operational and maintenance problems. In addition, the facility did not meet the annual loading limitations for total nitrogen and total phosphorous for 2020.
7. The permittee has failed to comply with the FOG mitigation plan. Until equipment upgrades and replacement have been completed, a comprehensive site-specific BMP plan is required to address the problems associated with the management and treatment of FOG,
8. The permittee has not submitted an updated 2020 Wastewater Capacity Management Plan (WCMP).
9. The calibration of the colorimeter used to monitor TRC is not being checked prior to each use using a series of chlorine standards or chlorine equivalency standards.
10. FOG particles are being discharged to the surface waters of the State.
11. The permittee is not complying with the FOG Mitigation plan and Special Condition M of the permit by not raising the water level or lowering the scum logs as necessary to ensure capturing FOG and other floating scum.
12. The permittee failed to report to the Department the measures taken to comply with the FOG Mitigation Plan for the years 2018, 2019 and 2020.

To bring this site into compliance with Environment Article Title 9, the following corrections should be made by the Patapsco WWTP:

- A. With respect to items 1 above, the permittee should ensure that all samples collected in support of the CWA meet all requirements in 40 CFR Part 136 and the approved method. Within 30 days of the receipt of this report, the permittee should develop a BMP plan to address the problems with the collection, shipment, and the contract laboratory's responsibility. To prevent violations in reporting under 40 CFR Parts 122 and 125.
- B. With respect to item 2 above, Rinsate and equipment blanks for the toxic chemical testing and tPCBs must be collected as specified in *REPORTING REQUIREMENTS FOR TOTAL PCBs (PCB CONGENERS) BY EPA METHOD 1668 C or A and MDE's Toxic Pollutant Monitoring Protocol and Reporting Requirements for Toxic Chemical Testing Analytical Data*
- C. With respect to item 3 above, within 30 days of the receipt of this report, the permittee must submit amended DMRs to correct the inaccurately reported tPCB data for the fourth quarter of 2020 and the first quarter of 2021.

- D. With respect to item 4 above, the extremely toxic 12 dioxin-like PCB congeners should be reported as specified in section D. 5. of the MDE's Guidance document titled *REPORTING REQUIREMENTS FOR TOTAL PCBs (PCB CONGENERS) BY EPA METHOD 1668 C or A*.
- E. With respect to item 5 above, the permittee should ensure that any future toxic chemical testing required by the NPDES permit follow all specified requirements with regards to sample collection, QA/QC procedures and Analytical methodology and reporting limits in the permit and *MDE's document titled Toxic Pollutant Monitoring Protocol and Reporting Requirements for Toxic Chemical Testing Analytical Data*
- F. With respect to item 6 above, the permittee should ensure that all process equipment is maintained appropriately to ensure satisfactory operation and compliance with the effluent limitations of the permit. The permittee shall ensure that the permit limitations are always met.
- G. With respect to item 7 above, within 90 days of the receipt of this report, the permittee should develop a site-specific BMP to address the problem caused by poorly functioning and inoperable equipment. This BMP should include procedures, preventive maintenance, spare parts inventory, and other appropriate measures for solving specific problems with the management and processing of FOG.
- H. With respect to item 8 above, within 90 days of the receipt of the report, the permittee should submit an updated WCMP for the period ending 12/2020. The permittee is advised to notify the Department at the address listed in Special Condition C of the permit immediately upon electronic submission of reports through NetDMR tool or by email to gurusharan.pancholi@maryland.gov.
- I. With respect to item 9 above, the calibration of the colorimeter used to monitor TRC must be checked prior to each use using a series of chlorine standards or chlorine equivalency standards e.g., chlorine gel standards, potassium permanganate to comply with the approved method and 40 CFR Part 136 requirements. In addition, the colorimeter must be checked quarterly at a minimum of three points using a series of primary chlorine standards in the range of 0.05 to 4.0 mg/l. The results of these checks must be recorded and be available onsite for auditor review.
- J. With respect to item 10 above, the FOG skimming devices on the PSTs are not functioning properly, the permittee's operational and maintenance staff should make a concerted effort to ensure that there are no releases of floating scum and FOG as I observed during this inspection. The scum troughs on the PSTs should be checked and manually turned as appropriately. Excessive amounts of grease should be removed and disposed of properly. The scum collection pit(s) should be checked and pumped or drained, as necessary. The scum logs at the chlorine contact basins should be monitored and adjusted to ensure that they are at water level and able to effectively collect the floating FOG and scum. The scum, FOG and other floatable substances should be routinely skimmed-off and the collected materials

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should be disposed of properly. To ensure compliance with **Title 9 of the Environmental Article and General Condition B 3 of the discharge permit**, the permittee must develop a suitable plan (see item G above) that addresses the management of FOGs at both the PSTs and the contact chambers. In addition, the skimmers at the PSTs were overwhelmed with FOGs at the time of my visit. The facility must take the appropriate action to ensure that the collected FOG is cleared from the skimming units before a buildup occurs and excess amounts of FOG overflow the skimmers.

- K. With respect to item 11 above, during normal flow condition, the permittee shall either raise the water level or lower the scum logs in the contact chamber to optimize the FOG removal efficiency. Floating oils spill booms should be placed in the contact chambers where the scum logs are not used to prevent the discharge of FOG.
- L. With respect to item 12 above, within 30 days of the receipt of this report, the permittee should submit to the Department a report detailing all specific measures and actions taken to ensure compliance with the FOG Mitigation Plan since the issuance of the permit through December 31, 2020. Then, the permittee shall begin submitting on an annual basis at the end of each calendar year all measures taken during the year to comply with the FOG Mitigation Plan.

STATE LAW PROVIDES FOR PENALTIES FOR VIOLATIONS OF MARYLAND ENVIRONMENT ARTICLE TITLE 9 FOR EACH DAY THE VIOLATION CONTINUES. THE MARYLAND DEPARTMENT OF THE ENVIRONMENT MAY SEEK PENALTIES FOR THE AFOREMENTIONED VIOLATIONS OF TITLE 9 ON THIS SITE FOR EACH DAY THE VIOLATION CONTINUES

NPDES Municipal Major Surface Water - Inspection Checklist

<i>Inspection Item</i>	<i>Status</i>	<i>Comments</i>
Does the facility have a discharge permit?	No Violations Observed	
Is the discharge permit current?	No Violations Observed	
If the permit is not current, has facility applied for renewal?	No Violations Observed	
Does the facility operate as authorized by their current permit?	No Violations Observed	
Has the Permittee exceeded the permitted capacity of the WWTP?	No Violations Observed	
Is the number and location of discharge points	No Violations	

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NPDES Municipal Major Surface Water - Inspection Checklist

<i>Inspection Item</i>	<i>Status</i>	<i>Comments</i>
as described in the discharge permit?	Observed	
Has permittee submitted correct name and address of receiving waters?	No Violations Observed	
Is the permittee meeting the compliance schedule per permit requirements?	No Violations Observed	
Has the operator or superintendent been certified by the Board in the appropriate classification for the facility?	No Violations Observed	See Narrative section
Are adequate records being maintained for the sampling date, time, and exact location; analysis dates and times; individual performing analysis; and analytical results?	No Violations Observed	
Are adequate records being maintained for the analytical methods/techniques used?	No Violations Observed	
Does the permittee retained a minimum of 3 years worth of monitoring records including raw data and original strip chart recordings; calibration and maintenance records; and reports?	No Violations Observed	
Do lab records reflect that lab and monitoring equipment are being properly calibrated and maintained?	Out of Compliance	See Narrative section
Does the permittee/laboratory use suitable QA/QC procedures and operate a formal quality assurance (QA) program using appropriate controls?	Not Evaluated	Contract laboratory not evaluated
Has the permittee submitted the monitoring results on the proper Discharge Monitoring Report form?	No Violations Observed	
Do the Discharge Monitoring Reports reflect permit conditions?	No Violations Observed	
Has the permittee submitted these results within the allotted time electronically?	No Violations Observed	
Is the facility being properly operated and maintained including:(a) stand-by power or equivalent provisions available, (b) adequate alarm system for power or equipment failure available, (c) all treatments units are in service, .	Out of Compliance	See Narrative
Is sewage sludge managed correctly per permit requirements?	4 - Not Evaluated	
If a by-pass occurred since last inspection, has the permittee submitted notice of the by-pass within the allotted time?	Out of Compliance	During the inspection I learned that the ENR denitrification filters were bypassed. The Department was not given notice prior to the bypassing
If a non-complying discharge occurred since	No Violations	

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NPDES Municipal Major Surface Water - Inspection Checklist

<i>Inspection Item</i>	<i>Status</i>	<i>Comments</i>
the last inspection, was the regulatory agency notified within the allotted time?	Observed	
If applicable, has the permittee complied with all special conditions of their permit?	No Violations Observed	
Have overflows occurred since the last inspection?	Not Evaluated	
Have records of overflows been maintained at the facility for at least five years?	4 - Not Evaluated	
Are flow measuring devices properly installed and operated, calibration frequency of flow meter adequate, flow measurement equipment adequate to handle expected ranges of flow?	No Violations Observed	
Are discharge monitoring points adequate for representative sampling?	No Violations Observed	
Do parameters and sampling frequency meet the minimum requirements?	Out of Compliance	See Narrative
Does the permittee use the method of sample collection required by the permit?	Out of Compliance	See narrative section
Are analytical testing procedures used approved by EPA?	No Violations Observed	
If alternate analytical procedures are being used, has proper approval been obtained?	No Violations Observed	
Has the permittee notified the Department of the name and address of the commercial laboratory?	No Violations Observed	
Were discharges observed at the authorized outfalls?	No Violations Observed	
If discharges were observed, do the discharges or receiving waters have any visible pollutants observed?	Out of Compliance	See Narrative
Were discharge samples collected?	No Violations Observed	
Does this facility have coverage under a a NPDES stormwater discharge permit?	4 - Not Evaluated	
If the permittee has coverage under a NPDES storm water permit, has a storm water pollution prevention plan been developed and implemented as required?	4 - Not Evaluated	
Are the permit conditions being met?	Out of Compliance	See Narrative Section

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Inspector: Ronald Wicks 6/4/2021
Ron, Wicks/Date
ron.wicks@maryland.gov
410-537-3510

Received by: _____
Signature/Date

Print Name